

# ***The Status of Utility Demand-Side Management in South Carolina, 2004***



Santee Cooper's Cross power plant, located in Berkeley County

A Report by the  
South Carolina Energy Office  
Division of Insurance and Grants Services  
State Budget and Control Board

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# EXECUTIVE SUMMARY

## Introduction

The South Carolina Energy Office conducted a survey of electric and natural gas utilities to acquire a better understanding of the current status of power demand and usage in South Carolina as of 2004. Unlike previous editions of *The Demand-Side Management Report* (DSM Report), this edition is not an attempt to quantify the savings from demand-side management programs, or to provide an in-depth analysis of the various demand-side management activities undertaken by some of the utilities. In earlier DSM Reports, utilities were fairly active in providing DSM programs to their customers. However, over the past few years, DSM activities have been steadily declining, and in many cases have been eliminated altogether.

*The Status of Utility Demand-Side Management Activities in South Carolina, 2004* (DSM Report) provides quantitative power usage information submitted by retail distributors of electricity and natural gas in South Carolina, including investor-owned utilities, the state-owned Santee Cooper, electric cooperatives, and municipalities. It includes actual and projected data, as well as a compendium of the various demand-side management programs implemented by some of the utilities. Additional information from various sources is also included to provide a more comprehensive understanding of the role the electric industry plays in South Carolina.

## Objective of Report

The legislation requiring this report was passed in 1992 by the South Carolina General Assembly, and was published annually up to 2000. At that time, the overall purpose of the report was to measure demand-side activities for lowering electric and gas needs in South Carolina, and to present that information to the people of the state, its elected officials and the utilities themselves, with the hope of encouraging further implementation of demand-side management practices. Since then, the state of deregulation of the electric utility industry in the U.S., as well as policy evaluation in South Carolina, has thrust a climate of ambiguity over all of the decision-making processes in areas such as load or demand-side management. Demand-side management (DSM) involves modifying energy use to maximize energy efficiency. In contrast to "supply-side" strategies, which increase energy supplies (by building new power plants, for example), DSM strives to get the most out of existing energy resources, whether electric or gas. DSM involves utility consumers changing their energy use habits and using energy-efficient appliances, equipment, and buildings.

The objective of this 2004 report is to provide a truncated quantitative overview of the basic peak system demand, total annual system usage, total miles of distribution line, number of customers, and power generation supplied from qualified producers (QP). In addition, this report includes the DSM activities of those utilities that willingly provided such information. These programs consist of the planning, implementing, and monitoring activities of electric utilities that are designed to encourage consumers to modify their level and pattern of electricity usage. From 1995 to 2000, the writing and publication of this report was time intensive, and basically revealed very little new information.

This edition contains supplementary electric data covering topics such as class of ownership, number of ultimate consumers, revenue, sales, and average rate per kilowatthour, and other relevant statistical data.

## **Findings:**

Data submittals were received from 37 of the 46 electric utilities operating in South Carolina, and 11 of the 18 natural gas suppliers operating in the state. The general findings of the survey indicate that the future of electric demand-side programs in South Carolina appears bleak, due in part to the low cost of electricity as compared with the other states. Although interest in deregulation in the state has mostly faded, there has been no corresponding renewal of interest in demand-side management programs.

### Electricity

- Only 7 electric utilities reported having active DSM programs: all three investor-owned utilities, the state-owned Santee Cooper, and three electric cooperatives.
- Annual peak demand reached 15,069 MW in 2004.
- Over 76,703 MWh of electricity were used in 2004, as indicated by data from the reporting utilities.
- The average annual electric bill for South Carolina residential electric customers from all utilities in 2002 was \$1,126.54, in comparison to \$920.83 for the national average.
- South Carolina ranks third in electricity consumption per capita in the U.S., and has the fifth highest residential monthly electric bill with an average of \$94.95.
- South Carolina residential customers rank fourth in the nation in per capita amount of money spent on electricity.

### *Qualified Facilities*

Qualified facilities include industrial cogenerators and independent power producers using renewable fuel sources. They currently have the capacity to provide about 372 MW of power, which helps contribute to the ability to meet system peak demand.

### Natural Gas

For purposes of the 2004 report, the survey requested annual deca-therm (DT) peak system demand, total annual system deca-therm sales, total miles of distribution line, and total numbers of customers. Ten natural gas utilities submitted their data for the survey. According to survey data, during 2004, the annual peak system demand was 3.88 million DT, the total annual system use was 93.5 million DT, there were over 20,000 miles of distribution line, and 539,480 natural gas customers.

# **The Status of Utility Demand-Side Management Activities for 2004**

## **Introduction**

What is Demand Side Management? Demand-side management or "DSM" is the process of managing the consumption of energy, generally to optimize available and planned generation resources.

How does it work? The goal of demand-side management is to smooth out the daily peaks and valleys in electric or gas energy demand to make the most efficient use of energy resources and to defer the need to develop new power plants. This may entail shifting energy use to off-peak hours, reducing energy requirements overall, or even increasing demand for energy during off-peak hours. All DSM strategies have the goal of maximizing efficiency to avoid or postpone the construction of new generating plants.

This report provides quantified electricity and natural gas data, which was submitted by retail distributors in South Carolina, including investor-owned utilities, the state-owned Santee Cooper, electric cooperatives, and municipalities. The report includes actual data from calendar years 2000 through 2004, and projected data from 2005 through 2009. Unlike previous editions, the main focus of this report is not on the detailed cost avoidance and usage savings due to DSM activities, but to present the requested utility data in its most basic form.

## **Background**

The South Carolina Energy Conservation and Efficiency Act of 1992 requires all utilities to report annually on demand-side activities. This is the tenth report on demand-side management that includes data submitted by the suppliers of electricity and natural gas in South Carolina.

In the past, the primary objective of most DSM programs was to provide cost-effective energy and capacity resources to help defer the need for new sources of power, including generating facilities, power purchases, and transmission and distribution capacity additions. However, due to changes occurring within the industry, electric utilities are also using DSM to enhance customer service. DSM refers only to energy and load-shape modifying activities undertaken in response to utility-administered programs. It does not refer to energy and load-shape changes arising from the normal operation of the marketplace or from government-mandated energy-efficiency standards.

Since interest in demand-side management programs has waned both in South Carolina and the nation over the past few years, this report is designed to make available pertinent electric and natural gas statistics to South Carolina utilities for comparative and industry-specific evaluations.

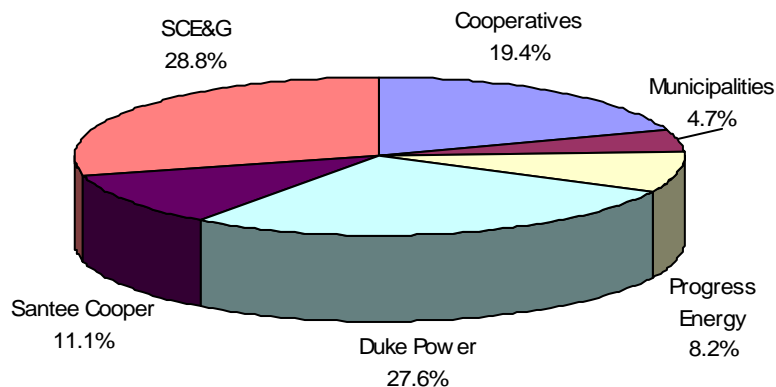
## Findings

### I. Electricity

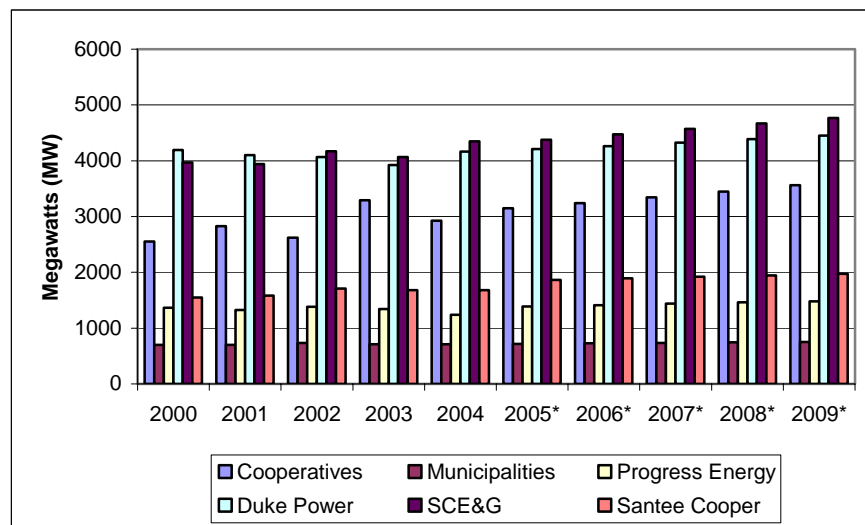
#### *Annual Peak System Demand*

The survey requested the utilities to provide the total amount of retail energy demand in MW during the highest annual peak demand during the calendar year. Figure 1 indicates that SCE&G and Duke Power accounted for the largest peak demand with 28.8 percent and 27.6 percent, respectively. The actual and projected growth in annual peak system demand is presented in Figure 2, and shows an overall increase in actual peak demand of 5.1 percent from 2000 to 2004, and a projected increase of 12.7 percent from 2004 to 2009.

**Figure 1. Distribution Sources of Supply to Meet Annual Peak Demand of 15,069 MW in 2004**



**Figure 2. Growth in Annual Peak System Demand**



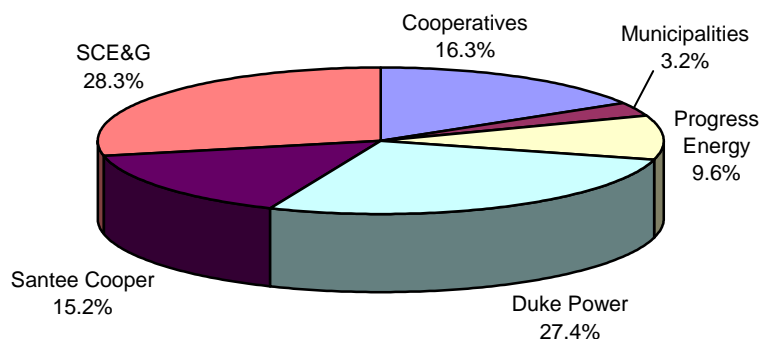
\*Projected.

## Total Annual System Consumption

Another goal of demand-side activities is to increase efficiency by reducing the overall amount of energy used over time (as opposed to the peak demand amount used at a given instant). This energy is measured in megawatt hours (MWh) and is based on annual consumption. Whereas, the lowering of peak demand decreases the need for additional power plants, reducing the amount of energy consumed conserves fuel resources and reduces harmful emissions into the atmosphere.

Figure 3 illustrates the total amount of annual generation in MWh that was used by retail customers during 2004. Of the utilities that submitted data, over 76,700 MWh of electricity were used in 2004. Two investor-owned utilities, SCE&G (28.3%) and Duke Power (27.4%), account for the largest amounts of total electricity consumption in South Carolina for this category.

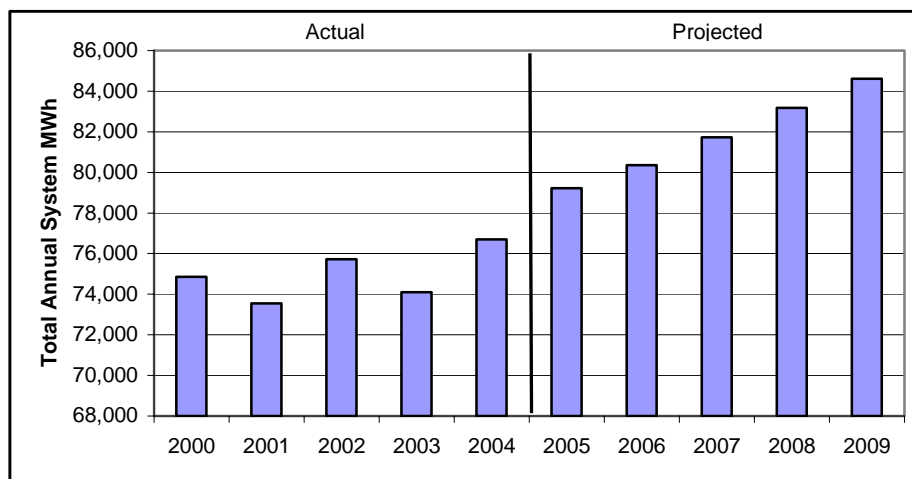
**Figure 3. Total Annual System Electricity Consumption (MWh), 2004**



\*Lockhart Power Company did not report data for annual system MWh.

According to data submitted by utilities, the growth of total annual system generation for retail consumption is projected to increase 13 percent from 2004 to 2009, as shown in Figure 4.

**Figure 4. Growth of Annual System Generation for Retail Consumption**

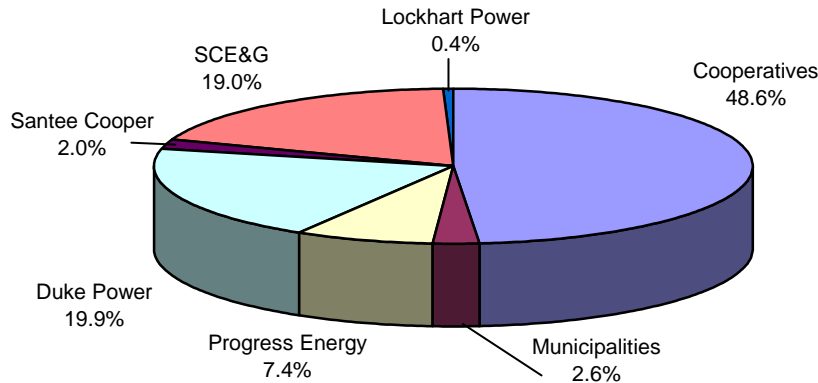




### *Miles of Distribution Line*

In 2004, there were 118,360 total miles of power distribution line as indicated by data from reporting utilities. Interestingly enough, Figure 5 shows that the electric cooperatives comprise nearly half of all distribution line in the state. Projected growth indicates only a slight increase in the miles of distribution line over the next few years.

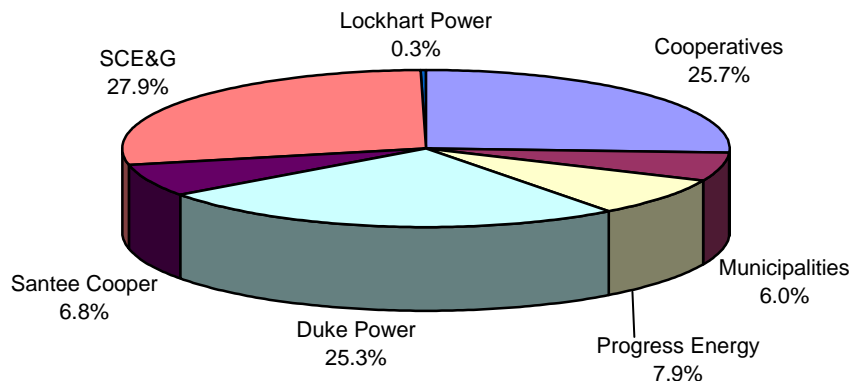
**Figure 5. Total Miles of Power Distribution Line, 2004**



### *Number of Customers*

Historically, SCE&G has had the largest electric power customer base in South Carolina, accounting for 27.9 percent of the total numbers of customers in 2004. Submitted data projects a sustained annual customer growth rate of about 2 percent for all utilities through 2009.

**Figure 6. Number of Retail Electric Utility Customers, 2004**



## Qualified Facilities

The federal Public Utilities Regulatory Policies Act of 1978 (PURPA) allows end users who need to generate power for their facilities to make any excess power available to the electric utilities supplying those users. PURPA also allows private companies to generate and to supply electricity to public utilities if that power is generated using renewable energy resources. A Qualified Facility (QF), as defined by PURPA, includes industrial cogeneration facilities and independent power producers using renewable fuel sources, including wood wastes, incinerated municipal solid waste and small-scale hydro-electricity. Qualified facilities reduce the need for new power plants just as load management does, by reducing the demand on utilities' systems at peak times.

**Table 1. Listing of Electricity Qualified Facilities, 2004**

Utility	Plant Owner	Location	Fuel Type	Capacity (MW)	Purchase/ Displace
Progress Energy	DuPont Chemical	Camden	Coal	68	Displace
Progress Energy	Foster Wheeler	Charleston	Refuse	0.5	Purchase
Progress Energy	LA-Z-Boy Chair	Florence	Wood	29	Displace
Progress Energy	SONOCO	Hartsville	Coal	27	Displace
Progress Energy	Stone Container	Florence	Wood Chips	8.7	Purchase
<b>TOTAL=</b>				<b>133.2</b>	
Duke Power	Aquenergy	Piedmont	Hydro	1.5	Purchase
Duke Power	Aquenergy	Cateechee	Hydro	3.5	Purchase
Duke Power	Aquenergy	Cateechee	Hydro	2.4	Purchase
Duke Power	Aquenergy	Ware Shoals	Hydro	1.05	Purchase
Duke Power	BMW	Greer	Gas	0.45	Displace
Duke Power	Bob Jones University	Greenville	Diesel	5	Displace
Duke Power	Cherokee County	Gaffney	Gas	6.3	Purchase
Duke Power	Converse Energy	Clifton	Hydro	0.24	Purchase
Duke Power	Daniel Nelson Evans	Spartanburg	Hydro	0.8	Purchase
Duke Power	Northbrook Carolina Hydro	Ware Shoals	Hydro	1.25	Purchase
Duke Power	Northbrook Carolina Hydro	Belton	Hydro	4.5	Purchase
Duke Power	Northbrook Carolina Hydro	Greenville	Hydro	2.2	Purchase
Duke Power	Pacolet River Power	Clifton	Hydro	3.3	Purchase
Duke Power	Pelzer Hydro Co.	Pelzer	Hydro	5	Purchase
Duke Power	Pelzer Hydro Co.	Williamston	Hydro	100	Purchase
<b>TOTAL=</b>				<b>137.5</b>	
SCE&G	Dept. of Defense	Parris Island	Coal	97.5	Displace
SCE&G	International Paper	Eastover	Wood Chips	3	Purpose/Displace
<b>TOTAL=</b>				<b>100.5</b>	
Lockhart Power Co.		Pacolet	Hydro	0.8	Purchase
City of Seneca	Coneross Power Co.	Seneca	Hydro	0.8	Purchase
<b>TOTAL FOR 24 STATIONS</b>				<b>372.8</b>	

Source: South Carolina Office of Regulatory Staff.

Electricity from qualified facilities is classified into two categories: 1) purchase, meaning the utilities purchase the power generated; and 2) displace, meaning that the power is used by the facility itself, which would otherwise be using power from the utility's grid. Displacement from qualified facilities, in other words, is analogous to demand-side activities presented by some utilities in this report, in that it contributes to reducing overall system peak. Purchase is a direct, non-utility addition to total system peak capacity. As shown in Table 1, qualified facilities in South Carolina had the capacity to provide 142.8 MW of purchase power and 230 MW of displacement power, for a total of 372.8 MW of power in 2004.

The survey sent out by the Energy Office requested the total generation kWh (converted to MWh) supplied from qualified producers or avoided due to their operation. From the submitted data, Progress Energy comprised 57.9 percent of such generation in 2004, followed by Duke Power with 39.4 percent, and SCE&G, with 2.6 percent. Although submitted data on projected generation was incomplete, there was a 12 percent decrease from 2000 to 2004.

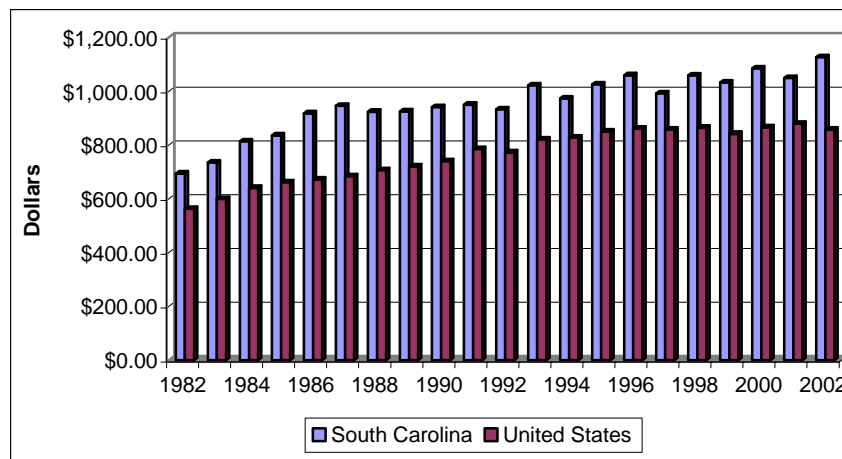
### *Supplementary Electricity Data*

This section includes electric data research findings extrapolated from the *South Carolina Energy Statistical Profile*, published by the Energy Office, which helps provide a better overall picture of the status of the electric industry in South Carolina.

### Consumption, Cost, and Expenditures

The average annual residential electric bill for South Carolina investor-owned utilities in 2002 was \$1,126.36, an increase of 62.3 percent or \$432.19 from 1982, as compared with \$857.12 on the national level, an increase of 52.4 percent or \$294.58 (Figure 7). The average annual electric bill for South Carolina residential electric customers from all utilities (municipal, cooperatives, investor-owned) in 2002 was \$1,126.54, and \$920.83 for the national average. In addition, from 1982 to 2002 the kWh per customer increased by 23.5 percent in South Carolina as compared with 17.6 percent on the national level.

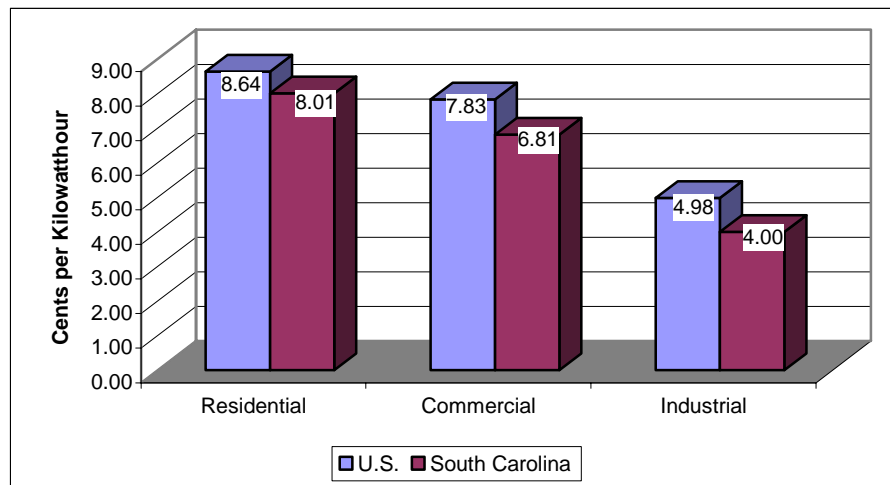
**Figure 7. South Carolina and U.S. Annual Average Residential Electric Bill for Investor-owned Electric Utilities, 1982-2002**



Source: Edison Electric Institute, Statistical Yearbook of the Electric Utility Industry.

South Carolina ranks third in electricity consumption per capita in the U.S., and has the fifth highest residential monthly electric bill with an average of \$94.95. Although the average residential rate per kWh in South Carolina is better than the average rates for 25 other states, South Carolina residential customers rank fourth in the nation in the per household amount of money spent on electricity. This greater cost of electricity is the result of high consumption levels, not high rates. Moreover, not only does South Carolina have a lower average rate per kilowatthour in the residential sector than the national average, but also in the commercial and industrial sectors as indicated in Figure 8.

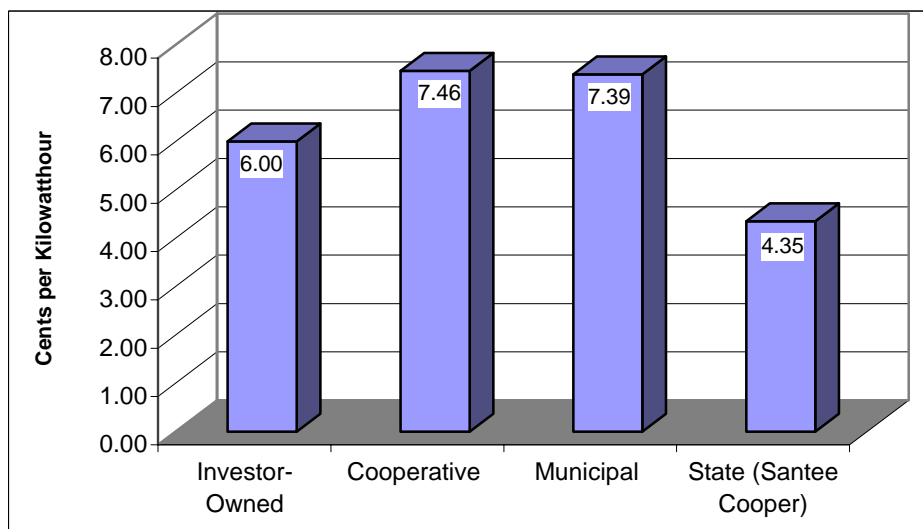
**Figure 8. U.S. and South Carolina Comparison of Electric Utility Average Rate per kWh by Sector, 2003**



Source: Energy Information Administration, *Electric Sales and Revenue Database File*.

As shown in Figure 9, the average electric rate per kilowatthour for investor-owned utilities in 2003 was 6 cents, 7.46 cents for cooperatives, 7.39 cents for municipal utilities, and 4.35 cents for the state-owned Santee Cooper.

**Figure 9. South Carolina Average Electric Rate per kWh by Class of Ownership, 2003**



Source: Energy Information Administration, *Electricity Database File*.

Table 2 provides a profile of residential statistical information for all the power utilities in South Carolina.

**Table 2**

<b>Class of Ownership, Number of Ultimate Consumers, Revenue, Sales, and Average Rate per Kilowatthour for the Residential Sector by South Carolina Electric Utilities, 2003</b>					
<b>Electric Utility</b>	<b>Class of Ownership</b>	<b>Number of Consumers</b>	<b>Revenue (Thousand dollars)</b>	<b>Sales (Thousand kWh)</b>	<b>Average Rate per kWh (Cents)</b>
Abbeville, City of	Municipal	3,101	\$3,019	31,672	9.53
Aiken Electric Coop Inc	Cooperative	37,854	\$48,307	540,508	8.94
Bamberg Board of Public Works	Municipal	1,465	\$1,220	19,375	6.30
Bennettsville, City of	Municipal	4,225	\$4,256	54,750	7.77
Berkeley Electric Coop Inc	Cooperative	72,930	\$86,357	1,068,796	8.08
Black River Electric Coop, Inc	Cooperative	24,680	\$31,617	421,209	7.51
Blue Ridge Electric Coop Inc	Cooperative	54,877	\$62,531	670,373	9.33
Broad River Electric Coop, Inc	Cooperative	17,861	\$21,030	233,952	8.99
Camden, City of	Municipal	9,411	\$7,411	96,950	7.64
CP&L/Progress Energy	Investor-owned	136,620	\$166,912	2,061,811	8.10
Clinton Combined Utility Sys	Municipal	3,635	\$3,459	34,992	9.89
Coastal Electric Coop, Inc	Cooperative	9,936	\$13,269	141,831	9.36
Due West, City of	Municipal	316	\$412	3,296	12.50
Duke Energy Corporation	Investor-owned	413,450	\$395,926	5,693,569	6.95
Easley Combined Utility System	Municipal	10,873	\$12,308	135,717	9.07
Edisto Electric Coop, Inc	Cooperative	14,774	\$20,559	230,723	8.91
Fairfield Electric Coop, Inc	Cooperative	19,942	\$24,621	307,278	8.01
Gaffney, City of	Municipal	6,056	\$5,640	66,175	8.52
Georgetown, City of	Municipal	3,780	\$3,679	49,860	7.38
Greenwood Commissioners PW	Municipal	10,967	\$6,274	108,315	5.79
Greer Commission of Public Wks	Municipal	10,733	\$10,973	121,108	9.06
Haywood Electric Member Coop*	Cooperative	11	\$4	35	11.43
Horry Electric Coop Inc	Cooperative	42,398	\$54,790	644,266	8.50
Laurens, City of	Cooperative	4,381	\$4,074	567,296	8.56
Laurens Electric Coop, Inc	Municipal	43,004	\$48,586	41,189	9.89
Little River Electric Coop Inc	Cooperative	11,327	\$12,937	143,264	9.03
Lockhart Power Co	Investor-owned	5,169	\$5,370	66,567	8.07
Lynches River Elec Coop, Inc	Cooperative	18,936	\$20,535	242,597	8.46
Marlboro Electric Coop, Inc	Cooperative	5,348	\$7,742	87,323	8.87
McCormick, Town of	Municipal	878	\$949	11,529	8.23
Mid-Carolina Electric Coop Inc	Cooperative	38,900	\$50,735	619,101	8.19
Newberry, City of	Cooperative	3,937	\$3,883	150,215	7.40
Newberry Electric Coop, Inc	Municipal	11,121	\$11,109	46,673	8.32
Orangeburg, City of	Municipal	20,151	\$17,484	285,000	6.13
Palmetto Electric Coop Inc	Cooperative	48,227	\$55,171	798,424	6.91
Pee Dee Electric Coop, Inc	Cooperative	27,486	\$37,525	440,786	8.51
Prosperity, Town of	Municipal	561	\$505	6,646	7.60
Rock Hill, City of	Municipal	23,222	\$24,168	275,698	8.77
Santee Electric Coop, Inc	State	39,983	\$51,084	617,862	6.98
Seneca, City of	Cooperative	4,788	\$4,381	54,817	8.27
South Carolina Electric & Gas	Municipal	481,380	\$604,104	6,998,139	7.99
Santee Cooper	Investor-owned	112,213	\$102,213	1,464,246	8.63
Tri-County Electric Coop, Inc	Cooperative	16,758	\$22,188	30,500	9.20
Union, City of	Municipal	6,006	\$6,857	241,073	9.86
Westminster, City of	Municipal	1,404	\$1,345	69,570	11.03
Winnsboro, Town of	Municipal	3,396	\$2,683	12,192	8.80
York Electric Coop Inc	Cooperative	29,451	\$36,980	414,371	8.92
<b>Total</b>	<b>471</b>	<b>1,867,922</b>	<b>\$2,117,182</b>	<b>26,421,639</b>	<b>8.01</b>

\*A North Carolina-based electric cooperative.

Source: Energy Information Administration, *Electricity Database File*.

Table 3 presents a statistical breakdown of electric utilities that provide power to the commercial sector in South Carolina.

**Table 3**

<b>Class of Ownership, Number of Ultimate Consumers, Revenue, Sales, and Average Rate per Kilowatthour for the Commercial Sector by South Carolina Electric Utilities, 2003</b>					
<b>Electric Utility</b>	<b>Class of Ownership</b>	<b>Number of Consumers</b>	<b>Revenue (Thousand Dollars)</b>	<b>Sales (Thousand kWh)</b>	<b>Average Rate per kWh (Cents)</b>
Abbeville, City of	Municipal	495	\$2,428	27,835	8.72
Aiken Electric Coop Inc	Cooperative	2,508	\$8,233	114,986	7.16
Bamberg Board of Public Works	Municipal	363	\$1,277	21,004	6.08
Bennettsville, City of	Municipal	530	\$3,136	40,335	7.77
Berkeley Electric Coop Inc	Cooperative	7,721	\$13,431	166,685	8.06
Black River Electric Coop, Inc	Cooperative	3,369	\$7,199	90,040	8.00
Blue Ridge Electric Coop Inc	Cooperative	3,754	\$10,662	127,170	8.38
Broad River Electric Coop, Inc	Cooperative	617	\$2,079	23,906	8.70
Camden, City of	Municipal	1,442	\$5,286	66,895	7.90
CP&L/Progress Energy	Investor-owned	31,395	\$127,101	1,784,958	7.12
Clinton Combined Utility Sys	Municipal	605	\$3,749	41,131	9.11
Coastal Electric Coop, Inc	Cooperative	848	\$1,773	19,017	9.32
Due West, City of	Municipal	31	\$390	8,644	4.51
Duke Energy Corporation	Investor-owned	80,153	\$309,908	5,172,087	5.99
Easley Combined Utility System	Municipal	1,608	\$10,528	121,867	8.64
Edisto Electric Coop, Inc	Cooperative	4,041	\$3,716	40,092	9.27
Fairfield Electric Coop, Inc	Cooperative	1,002	\$4,943	66,188	7.47
Gaffney, City of	Municipal	1,175	\$8,510	92,171	9.23
Georgetown, City of	Municipal	1,164	\$7,108	85,328	8.33
Greenwood Commissioners-PW	Municipal	2,278	\$3,391	51,976	6.52
Greer Commission of Public Wks	Municipal	3,607	\$9,150	116,294	7.87
Haywood Electric Member Corp*	Cooperative	3	\$5	56	8.93
Horry Electric Coop Inc	Cooperative	6,296	\$11,465	138,700	8.27
Laurens Electric Coop, Inc	Cooperative	3,335	\$10,634	114,812	9.26
Laurens, City of	Municipal	836	\$3,863	51,615	7.48
Little River Electric Coop Inc	Cooperative	1,906	\$3,299	36,479	9.04
Lockhart Power Co	Investor-owned	1,132	\$1,709	19,399	8.81
Lynches River Elec Coop, Inc	Cooperative	873	\$3,269	38,979	8.39
Marlboro Electric Coop, Inc	Cooperative	1,150	\$1,971	24,165	8.16
McCormick, Town of	Municipal	194	\$722	7,747	9.32
Mid-Carolina Electric Coop Inc	Cooperative	4,311	\$15,187	198,533	7.65
Newberry Electric Coop, Inc	Cooperative	541	\$748	9,928	7.53
Newberry, City of	Municipal	829	\$4,963	61,311	8.09
Orangeburg, City of	Municipal	3,263	\$6,750	104,000	6.49
Palmetto Electric Coop Inc	Cooperative	9,137	\$30,368	446,276	6.80
Pee Dee Electric Coop, Inc	Cooperative	1,674	\$5,013	60,538	8.28
Prosperity, Town of	Municipal	117	\$220	2,745	8.01
Rock Hill, City of	Municipal	3,049	\$30,353	397,521	7.64
Santee Cooper	State	2,451	\$7,407	105,643	6.17
Santee Electric Coop, Inc	Cooperative	1,031	\$5,239	65,448	7.01
Seneca, City of	Municipal	82,588	\$496,643	7,122,007	8.00
South Carolina Electric & Gas	Investor-owned	25,610	\$111,040	1,799,970	6.97
Tri-County Electric Coop, Inc	Cooperative	629	\$1,214	17,700	7.90
Union, City of	Municipal	658	\$3,543	44,834	9.21
Westminster, City of	Municipal	1,051	\$5,399	58,599	9.27
Winnboro, Town of	Municipal	240	\$1,477	15,933	6.86
York Electric Coop Inc	Cooperative	2,918	\$9,627	114,582	8.40
<b>Total</b>	<b>47</b>	<b>304,528</b>	<b>\$1,316,126</b>	<b>19,336,129</b>	<b>6.81</b>

\*A North Carolina-based electric cooperative.

Source: Energy Information Administration, *Electricity Database File*.

Table 4 provides statistical information on the 33 utilities in South Carolina that provide power in the industrial sector in South Carolina.

**Table 4**

<b>Class of Ownership, Number of Ultimate Consumers, Revenue, Sales, and Average Rate per Kilowatthour for the Industrial Sector by South Carolina Electric Utilities, 2003</b>					
<b>Electric Utility</b>	<b>Class of Ownership</b>	<b>Number of Consumers</b>	<b>Revenue (Thousand Dollars)</b>	<b>Sales (Thousand kWh)</b>	<b>Average Rate per kWh (Cents)</b>
Aiken Electric Coop Inc	Cooperative	26	\$7,040	163,469	4.31
Bamberg Board of Public Works	Municipal	5	\$369	7,944	4.65
Berkeley Electric Coop Inc	Cooperative	250	\$9,637	176,851	5.45
Black River Electric Coop, Inc	Cooperative	18	\$6,411	127,806	5.02
Blue Ridge Electric Coop Inc	Cooperative	20	\$2,790	57,601	4.84
Broad River Electric Coop, Inc	Cooperative	3	\$1,156	16,682	6.93
CP&L/Progress Energy	Investor-owned	781	\$155,723	3,222,888	4.83
Clinton Combined Utility Sys	Municipal	6	\$2,261	34,610	6.53
Due West, City of	Municipal	1	\$10	103	9.71
Duke Energy Corporation	Investor-owned	1,866	\$371,185	9,872,667	3.76
Edisto Electric Coop, Inc	Cooperative	15	\$1,147	19,011	6.03
Fairfield Electric Coop, Inc	Cooperative	11	\$6,595	164,408	4.01
Gaffney, City of	Municipal	27	\$1,566	33,905	4.62
Greenwood Commissioners-PW	Municipal	176	\$5,668	121,902	4.65
Horry Electric Coop Inc	Cooperative	6	\$1,815	27,361	6.63
Laurens Electric Coop, Inc	Cooperative	29	\$8,803	156,366	5.63
Lockhart Power Co	Investor-owned	11	\$5,091	113,488	4.49
Lynches River Elec Coop, Inc	Cooperative	11	\$3,672	69,041	5.32
Marlboro Electric Coop, Inc	Cooperative	6	\$20,993	616,608	3.40
Mid-Carolina Electric Coop Inc	Cooperative	5	\$1,078	23,036	4.68
Newberry Electric Coop, Inc	Cooperative	80	\$5,294	94,542	5.60
Newberry, City of	Municipal	14	\$3,947	64,915	6.08
Orangeburg, City of	Municipal	344	\$22,347	450,000	4.97
Palmetto Electric Coop Inc	Cooperative	8	\$2,677	55,613	4.81
Pee Dee Electric Coop, Inc	Cooperative	21	\$15,570	369,414	4.21
Santee Cooper	State	32	\$275,286	7,978,576	3.45
Santee Electric Coop, Inc	Cooperative	14	\$24,038	583,553	4.12
Seneca, City of	Municipal	3	\$1,556	32,530	4.78
South Carolina Electric & Gas	Investor-owned	1,073	\$281,056	6,547,908	4.29
Tri-County Electric Coop, Inc	Cooperative	85	\$78	654	11.93
Union, City of	Municipal	14	\$709	8,318	8.52
Winnsboro, Town of	Municipal	37	\$2,272	34,000	6.68
York Electric Coop Inc	Cooperative	26	\$3,262	50,560	6.45
<b>Total</b>	<b>33</b>	<b>5,024</b>	<b>\$1,251,102</b>	<b>31,296,330</b>	<b>4.00</b>

Source: Energy Information Administration, *Electricity Database File*.

## **Demand-Side Management Activities, 2004**

This section provides the demand-side management activities of the utilities which submitted such reports to the South Carolina Energy Office. Included are program activities from three electric cooperatives, three investor-owned utilities, and the state-owned power utility, Santee Cooper.

### **Cooperatives**

#### **Pee Dee Electric Cooperative**

Pee Dee Electric Cooperative does not generate any of the electricity it sells to its member-owners. However, it does implement two programs geared toward reducing the generation required from its wholesale power provider. The first of these is a load control procedure. During possible peak conditions, PDEC personnel lower substation bus voltages through SCADA-controlled regulators. This can shave roughly two percent off of the total demand required by its system. The second method is a strict power factor penalty applied to any industrial member-owner (> 50 kW) whose power factor falls below 90 percent lagging. This penalty has encouraged the majority of such member-owners to purchase capacitor systems to correct power factors above 90 percent. Both of these procedures decrease the total amount of kVA that must be generated by Santee Cooper to meet PDEC's needs.

#### **Broad River Electric Cooperative**

Broad River Electric Cooperative does not have a DSM program to control loads on their system. Offers a "Time-Of-Use Rate" that discourages power usage during peak hours. There are approximately 200 meters (1.0%) on the TOU rate. Long range plan does not include any DSM activities.

#### **Laurens Electric Cooperative**

Conservation and Energy Efficiency: Laurens Electric's conservation and energy efficiency strategy is two-fold. First, Laurens Electric educates customers on energy efficiency and conservation through its web site, *Living in South Carolina* magazine, bill stuffers, brochures, and press releases to the local media. Second, Laurens Electric motivates customers to make improvements to existing homes and build energy efficient houses by offering a residential energy conservation rate.

Load Management: Laurens Electric offers load management to both small and large commercial and industrial customers. Small commercial and industrial customers are offered a Time-Of-Use energy rate, which provides cost savings for reducing energy consumption during on-peak hours. In addition to the Time-Of-Use rate, Laurens Electric's large commercial and industrial customers are provided a load management program that communicates to them when conditions are likely that our wholesale supplier could experience its monthly energy peak. In doing so, our customers have the opportunity to significantly drive down their energy costs by reducing their peak demand during this time.



Renewable Energy: In 2004, for the first time, Laurens Electric began selling blocks of green power to its residential customer-base. The green power for the program comes from methane gas that is generated at landfills across South Carolina. To date, Laurens Electric has sold approximately 269 blocks of green power.

## **Municipalities**

There are no reported DSM activities by municipal utilities.

## **Investor-Owned Utilities**

### **Duke Power Company**

#### Program Descriptions For Each Demand-Side Activity

##### **Residential Load Control – Air Conditioning (RIDER LC)**

This program is designed to provide a source of interruptible capacity to Duke at any time it encounters capacity problems during the cooling months of the year. Participants receive billing credits during the billing months of July through October for allowing Duke to interrupt electric service to their central air conditioning systems when capacity problems arise.

##### **Residential Load Control – Water Heating (RIDER LC)**

This program is designed to provide a source of interruptible capacity to Duke at any time it encounters capacity problems during the year. Participants receive billing credits each month of the year for allowing Duke to interrupt electric service to their water heaters when capacity problems arise. This program was closed to new installations on January 1, 1993 in North Carolina, and on February 17, 1993 in South Carolina.

##### **Standby Generator Control (RIDER SG)**

This program is designed to provide a source of interruptible capacity to Duke at any time it encounters capacity problems during the year. Participants in the program contractually agree to transfer electrical loads from the Duke source to their standby generators when so requested by Duke. The generators in this program do not operate in parallel with Duke's system and, therefore, cannot "backfeed" (or export power) into the Duke system. Participating customers receive payments for capacity and/or energy based on the amount of capacity and/or energy transferred.

##### **Interruptible Power Service (RIDER IS)**

This program is designed to provide a source of interruptible capacity to Duke at any time it encounters capacity problems during the year. Participants in the program contractually agree to reduce their electrical loads to specified levels when so requested by Duke. Failure to do so results in a penalty for the increment of demand which exceeds a specified level. The program has not been available to new participants since 1992.

#### Residential Service Water Heating - Controlled/Submetered

This program shifts a participating customer's water heating usage to off peak periods as determined by Duke. The program is currently available in accordance with rate Schedule WC. The customer is billed at a lower rate for all water heating energy consumption in exchange for allowing Duke to control the water heater.

#### High Efficiency Heat Pump and Central Air Conditioning Payment Program

This program encourages the installation of high efficiency (11 SEER or greater) heat pumps and central air conditioners in the residential and commercial markets. Qualifying units must meet specified size (Btu/hour) requirements. The central air conditioning portion of the program was closed effective October 1995 in South Carolina and December 1995 in North Carolina. The High Efficiency Heat Pump Program was rolled into the New and Existing Residential Housing Programs. The New Residential Housing Program is no longer available. Payments were removed from the Existing Residential Housing Program effective August 1998. Prior to 1994, the results were tracked separately for heat pumps and air conditioners.

#### High Efficiency Chillers Incentive Program

This program promotes the use of high efficiency central chiller equipment that reduces space conditioning electrical demand and energy consumption for cooling. The incentive paid is on a sliding scale depending on size and efficiency of equipment. This program was closed to new applications in July 1995 in South Carolina, and October 1995 in North Carolina.

#### Manufactured Housing Payment Program

Incentives are provided to manufactured home retailers to promote increased insulation levels and high efficiency heat pumps. Manufactured housing retailers are the first line contact with this market's potential home buyer. In order to qualify for the incentive, the new manufactured homes must meet the thermal requirements of rate Schedule RE-2. This program was rolled into the New Residential Housing Program, which is no longer available.

#### Residential HVAC Tune-Up Program

The purpose of this program is to assist the owners of single-family residential structures in improving the efficiency of their heating and cooling air distribution systems to reduce energy consumption and lower operating costs. A blower door analysis is performed by a qualified HVAC technician on each home to quantify the amount of duct leakage at a reference pressure. Repairs are made to the ductwork using a permanent sealant, such as mastic. These repairs benefit the customer by improving comfort and by increasing system efficiency which lowers energy usage. This program was rolled into the Existing Residential Housing Program. Payments were removed from the program effective August 1998.

#### High Efficiency Agricultural Ventilation Payment Program

This program promotes and encourages the installation of high efficiency fan systems in livestock growing, or greenhouse applications through incentive payments to agricultural

customers. Only new fan systems in either new or retrofit applications are eligible for incentives under this program. This program was closed on December 31, 1994.

#### Duct Sealing Payment Program

This existing residential program offers builders incentives to ensure that HVAC systems in new residential construction have minimal leaks in ductwork. The option includes requirements for thermal conditioning and a high-efficiency heat pump with a SEER of 11 or more. This program was rolled into the New Residential Housing Program, which is no longer available.

#### Residential Insulation Loan

Loans are offered to existing all-electric residential customers to offset the cost of increasing the insulation levels in their homes to the thermal requirements listed in rate Schedules RS-3 or 4, RE-2, or Maximum Value Home insulation standards. This program was rolled into the Existing Residential Housing Program.

#### Existing Residential Housing Program

This residential program represents Duke's activities in the existing residential market to encourage increased energy efficiency in existing residential structures, and to encourage the use of efficient electric end-uses. This program consists of the following options:

- 1) High Efficiency Heat Pump Program (discontinued as of August 1998)
- 2) Residential HVAC Tune-up Program (discontinued as of August 1998)
- 3) Residential Energy Products Loan Program

### **South Carolina Electric & Gas**

The Demand-Side Management Programs at SCE&G can be divided into three major categories: Customer Information Programs, Energy Conservation Programs and Load Management Programs.

#### Customer Information Programs

SCE&G's customer information programs fall under two headings: the annual energy campaigns and the web-based information initiative. Following is a brief description of each.

- The 2004 Energy Campaigns: In 2004 as in the past, SCE&G continued to proactively educate its customers and create awareness of issues related to energy and conservation management. Below is a list of the key elements of this campaign.
  - The summer and winter campaign consisted of several different strategies in communicating to our customers. Following are the strategies implemented:
    - Radio and Newspaper – two-week radio and newspaper campaigns were conducted in early July and October in all the major service areas. The spots featured energy savings tips, online energy management tools, and energy savings clinics.
    - Weatherline – energy saving tips on the Weatherline promoted.
    - “Energy Wise” newsletter – energy saving tips featured in the SCE&G “Energy Wise” newsletter distributed to customers in July via their bills.

- Bill Inserts – a bill insert issued to targeted customers promoting the Low-Income Home Energy Assistance Program (LIHEAP).
  - Brochures/Printed Materials – energy saving tips available on various printed materials in business offices.
  - On-hold Messaging – key energy messages developed for SCE&G call centers for customers placed on hold.
  - News Releases – distributed to print and broadcast media throughout SCE&G's service territory.
  - Featured News Guests – SCE&G energy experts conducted several interviews with the media regarding energy conservation and useful tips.
  - Project Cool Breeze – SCE&G was a sponsor of this program in Charleston that provided fans and/or air conditioners to lower income persons in the Lowcountry.
  - Web site – energy saving tips and other conservation information placed on the company's Web site. The address for the Web site was promoted in most of the communication channels mentioned above.
  - Weatherization Project – SCE&G partners targeted low-income homes in Beaufort and Sumter for weatherization. SCE&G employees volunteer their time to assist the effort.
  - Speakers Bureau – Representatives from SCE&G talk to local organizations about energy conservation. Also use company-produced video that highlights energy conservation.
  - Energy Awareness Month – company used the month as an opportunity to send information to the media discussing energy costs and savings tips.
  - Lowe's Partnership – SCE&G partnered with Lowe's to conduct energy saving seminars at Lowe's stores throughout SCE&G's service territory in October, Energy Awareness Month.
- WEB-Based Information and Services Programs: SCE&G now has available a Web-based tool which allows customers to access current and historical consumption data and compare their energy usage month-to-month and year-to-year, noting trends and spikes in their consumption. Feedback on this tool has been positive and nearly 100,000 customers have registered to access this tool as well as other account related information. The SCE&G Web site supports all communication efforts to promote energy savings tips and provides video instruction on weatherization as well as other useful content. For our business customers, online information includes: retrofit and conversion assistance, standby generator program, new construction information, expert energy assistance and more.

### Energy Conservation Programs

There are three energy conservation programs: the Value Visit Program, the Conservation Rate and our use of seasonal rate structures. A description of each follows:

- Value Visit Program: The Value Visit Program is designed to assist residential electric customers that are considering an investment in upgrading their home's energy

efficiency. We visit the customer's home and guide them in their purchase of energy related equipment and materials such as heating and cooling systems, duct insulation, attic insulation, storm windows, etc. Our representative explains the benefits of upgrading different areas of the home and what affect upgrading these areas will have on energy bills and comfort levels as well as informing the customer on the many rebates we offer for upgrading certain areas of the home (see attached rebate schedule). We also offer financing for qualified customers which makes upgrading to a higher energy efficiency level even easier. The Value Visit Program is often used in conjunction with our Rate 6 Program to achieve the maximum benefit for customers wanting to reduce their energy usage, make their homes more comfortable and to increase their home's overall value. There is a \$25 charge for the program, but this charge is reimbursed if the customer implements any suggested upgrade within 90 days of the visit. Information on this program is available on our website or by brochure.

- 0 to R30 attic insulation - \$6.00 per 100 sq.ft.
  - R11 to R30 attic insulation - \$3.00 per 100 sq.ft.
  - Storm windows - \$30.00 per house
  - Duct insulation - \$60.00 per house
  - Wall Insulation - \$80.00 per house
- Rate 6 Energy Saver/Energy Conservation Program: The Rate 6 Energy Saver / Energy Conservation Program rewards homeowners and home builders who upgrade their existing homes or build their new homes to a high level of energy efficiency with a reduced electric rate. This reduced rate, combined with a significant reduction in energy usage, provides for considerable savings for our customers. Participation in the program is very easy as the requirements are prescriptive and do not require a large monetary investment which is beneficial to all of our customers and trade allies. Homes built to this standard also have improved comfort levels and increased re-sale value over homes built to the minimum building code standards which is also a significant benefit to our customers. Information on this program is available on our website and by brochure.
  - Seasonal Rates: Many of our rates are designed with components that vary by season. Energy provided in the peak usage season is charged a premium to encourage conservation and efficient use.

### Load Management Programs

SCE&G's load management programs have as their primary goal the reduction of the need for additional generating capacity. There are four load management programs: Standby generator program; Interruptible load program; Real Time Pricing Rate; and the Time of Use Rates. A description of each follows.

- Standby Generator Program: The Standby Generator I Program was introduced in 1990 to serve as a load management tool. General guidelines authorize SCE&G to initiate a standby generator run request when reserve margins are stressed due to a temporary reduction in system generating capability, or high customer demand. The Standby Generator II Program was developed in 2000, authorizing standby generator

runs for revenue producing opportunities during times of high market prices. Through consumption avoidance, generator customers release capacity back to SCE&G where it is then used to satisfy system demand. Qualifying customers (able to defer a minimum of 200 kW) receive financial credits determined initially by recording the customer's demand during a load test. Future demand credits are based on what the customer actually delivers when SCE&G requests them to run their generator(s). This program allows customers to reduce their monthly operating costs, as well as earn a return on their generating equipment investment.

- Interruptible Load Program: SCE&G has over 200 megawatts of interruptible customer load under contract. Participating customers receive a discount on their demand charges for shedding load when SCE&G is short of capacity.
- Real Time Pricing (RTP) Rate: A number of customers receive power under our real time pricing rate. During peak usage periods throughout the year when capacity is low in the market, the RTP rate sends a high price signal to participating customers which encourages conservation and load shifting. Of course during low usage periods, prices are lower.
- Time of Use Rates: Our time of use rates contain higher charges during the peak usage periods of the day to encourage conservation and load shifting during these periods.

## **Progress Energy**

### **Progress Energy Carolinas, Inc. Annual Report of Demand Side Management Activities**

Progress Energy Carolinas, Inc. (PEC) has a number of conservation and energy efficiency, load management, cogeneration, and renewable energy programs in effect. These include the following programs:

#### Residential:

PEC's Residential programs are structured under a full-service energy efficiency umbrella to provide end-use customers with comfort, convenience, and peace of mind. These include:

#### Education and Awareness

Education and awareness are used to promote energy efficiency to customers. This encompasses the retrofit and new home markets for all types of residential structures (single family, multi-family, and manufactured housing). PEC proactively educates the end-use customers, assists them with questions and provides additional information, as needed, concerning energy efficiency.

#### Home Energy Check

Home Energy Check is an energy analysis tool (audit) first implemented in 2001 to assist residential consumers to better understand their energy usage and make personalized recommendations for energy improvements. The tool consists of an on-

line and mail-in version, depending on the customer's requirements. The on-line version links to a Lawrence Berkeley National Laboratory audit developed for the U.S. Department of Energy (DOE): <http://homeenergysaver.lbl.gov/>. In January 2005, PEC implemented a new improved Home Energy Check on its web site: [www.progress-energy.com](http://www.progress-energy.com)

### Energy Efficient Home

PEC introduced in the early 1980's the Energy Efficient Home program. This program provides residential customers with a 5 percent discount of the energy and demand portions of their electricity bills when their homes meet certain thermal efficiency standards that are significantly above the existing building codes and standards. Through September 2004, almost 300,000 dwellings qualify for the discount.

Currently, PEC utilizes the ENERGY STAR standard for new applications for the energy conservation discount. ENERGY STAR is the national symbol for energy efficiency. It is a partnership between the DOE, the U.S. Environmental Protection Agency (EPA), local utilities, product manufacturers, and retailers. Homes built with this label are at least 30% more efficient than the national Model Energy Code, have greater value, lower operating costs, increased durability, comfort, and safety. Features of an Energy Star Home include:

- Improved insulation
- Advanced windows
- Tightly-sealed ducts
- High-efficiency heating and cooling
- Reduced air infiltration

Homes that pass an ENERGY STAR test receive a certificate as well as a 5 percent discount on energy and demand portions of their electric bills. Builders receive training in building energy efficient homes, and a means of differentiating their product on the market place.

### Energy Efficiency Financing Program

The *Energy Efficiency Financing Program* offers low-interest loans so that customers can purchase heating and cooling systems, storm windows and doors, insulation and other cost-effective home improvements. Progress Energy sponsors the program which is administered by Volt VIEWtech in California, and dealer screening is performed by Smart Consumer Services of Asheville, North Carolina.

### **Large Load Curtailment:**

Progress Energy Carolinas utilizes three tariffs whereby industrial and commercial customers receive discounts for PEC's ability to curtail system load during times of high energy costs

and/or capacity constrained periods. Currently, there are 317 MW of curtailable load under these tariffs on PEC's system.

### **Voltage Control:**

This procedure involves reducing distribution voltage by up to 5 percent during periods of capacity constraints and can reduce peak load requirements about 57 MW. Typically, this level of reduction does not adversely impact customer equipment or operations.

### **Renewables:**

Progress Energy Carolinas is involved in several renewable energy activities.

#### **Biodiesel Fuel**

PEC supports the North Carolina Triangle J Council of Government's biodiesel initiative by fueling some of Progress Energy's trucks at two biodiesel fueling stations in Wake County, N.C. – one in Garner and one in Cary.

Biodiesel is a fuel that can be used in any diesel vehicle with no modifications. It is produced from organic feed stocks such as soybeans, cooking oil and animal fats.

### **Cogeneration:**

Progress Energy Carolinas purchases electricity from 30 cogenerators or small power producers. Twenty-three (23) of these utilize renewable resources to produce all or a part of the energy sold to PEC. These renewable resources include solar, biomass, hydro, wood, and refuse.

In addition, PEC is also aware of 17 customers with customer-owned generation with a generation capacity of 361 MW, which serves a portion of their electrical load.

### **State-Owned Utility**

#### **Santee Cooper (South Carolina Public Service Authority)**

##### **Demand Side Management Activities**

#### ***Good Cents New and Improved Home Program***

The Good Cents Program provides residential customers an incentive to build new homes to higher levels of energy efficiency and improve existing homes by upgrading heating and air conditioning equipment and the thermal envelope to high energy efficiency standards. All homes are evaluated to determine if they meet the standards set for the program. Inspections are completed during construction for new homes and at the completion of construction for new and improved homes. Participants are eligible for an incentive rate.



### *H<sub>2</sub>O Advantage Water Heating Program*

H<sub>2</sub>O Advantage is a storage water heating program designed to shift the demand related to water heating off-peak. This is accomplished with the installation of an electronic timer or radio controlled switch on an 80-gallon water heater. This program began in 1990 and was offered for the last time in 2000. The contract spans ten years so this program will no longer be impacting the system after 2010.

### *Commercial Good Cents*

Commercial Good Cents is offered to commercial customers building new facilities that improve the efficiency in the building thermal envelope, heating and cooling equipment, and lighting. Commercial customers that meet program standards are given an up-front rebate to encourage participation in the program.

### *Thermal Storage Cooling Program*

The Thermal Storage Cooling Program shifts energy used by commercial customers for air conditioning from peak to off-peak hours by utilizing thermal energy stored in a medium such as ice or water. Rebates are offered to customers who install this type of equipment.

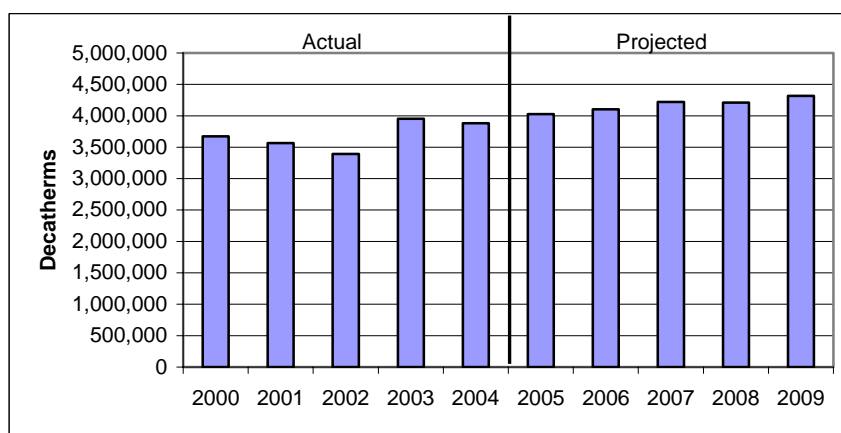
## II. Natural Gas

As discussed in the electricity section, the basic purpose of demand-side activities is to change energy-use decisions of customers in ways that are beneficial to both the customers and the utility itself. Whereas electric utilities must meet their load instantaneously, natural gas suppliers have the ability to store gas and use interruptible contracts to maintain reliability. There are two categories of demand-side activities for natural gas: conservation and load management programs.

### *Annual Peak System Demand*

Of the ten natural gas utilities submitting data, Clinton-Newberry Natural Gas Authority had the highest annual peak system demand with 1,493,906 decatherms in 2004. Figure 10 illustrates that from 2000 to 2004, peak demand increased by 5.8 percent, and an increase of 11.2 percent is projected from 2004 to 2009.

**Figure 10. Annual Peak System Demand (Decatherms)**



### *Total Annual System Data and Customers*

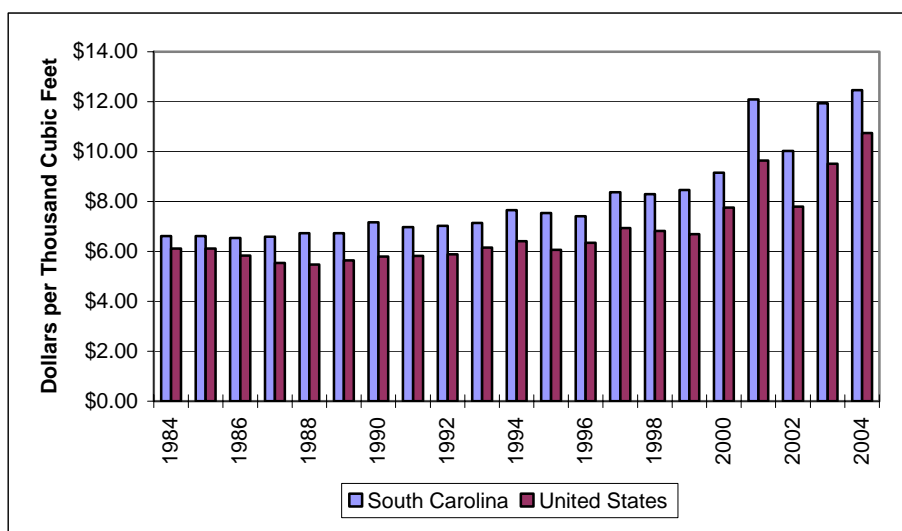
From 2000 to 2004, the total annual system consumption of natural gas in decatherms, decreased by 4.2 percent, but is projected to increase by 13.6 percent through 2009. In 2004, SCE&G accounted for 46.3 percent of the total natural gas sold to customers as indicated by the reporting entities, followed by Piedmont Natural Gas Company with 28.1 percent.

According to data submitted for the survey, the total number of natural gas customers for all classes (residential, commercial, and industrial), rose by 10.8 percent from 2000 to 2004, and projected numbers show an increase of 11 percent through 2009. In 2004, SCE&G comprised 53.2 percent of all natural gas customers, with Piedmont Natural Gas Company accounting for 23.1 percent.

## Supplemental Natural Gas Findings

Since only 26 percent of South Carolina households use natural gas for heating, the price has been historically higher than the national average. South Carolina natural gas prices rose by \$5.84 per thousand cubic feet from 1984 to 2004 in the residential sector, as compared with \$4.62 for the U.S. average. The average annual cost per residential natural gas customers in South Carolina is \$622.19.

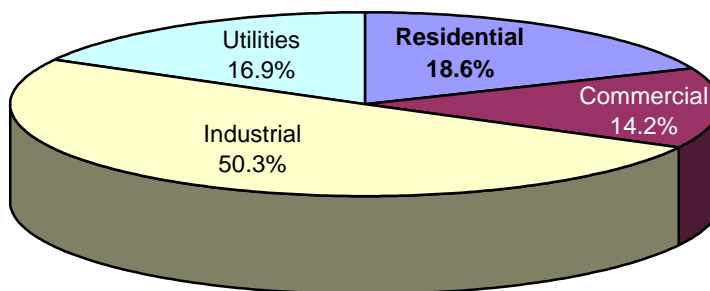
**Figure 11. Average Price Comparison of Natural Gas Delivered to South Carolina and U.S. Residential Customers, 1984-2004**



Source: Energy Information Administration, *Natural Gas Price* database.

Figure 12 shows the natural gas distribution by end-use sector, and clearly specifies that the industrial sector is the largest consumer of this fuel source. When broken down for average consumption per consumer in thousand cubic feet, the industrial sector leads with 50,068, followed by the commercial sector with 400, and the residential sector with 56.

**Figure 12. Distribution Proportion of Natural Gas to End-Use Customers, 2004**



Source: Energy Information Administration, *Natural Gas Monthly*.

## **Appendix A. 2004 Demand-Side Management Survey Participants**

### **Electric Utilities**

Abbeville, City of	Marlboro Electric Cooperative
Aiken Electric Cooperative	McCormick Commission of Public Works
Berkeley Electric Cooperative	Mid-Carolina Electric Cooperative
Black River Electric Cooperative	Newberry Electric Cooperative
Broad River Electric Cooperative	Newberry, City of
Camden, City of	Orangeburg Department of Public Utilities
Clinton, City of	Palmetto Electric Cooperative
Coastal Electric Cooperative	Pee Dee Electric Cooperative
Duke Power Company	Progress Energy (formerly CP&L)
Easley Combined Utility System	Prosperity, Town of
Edisto Electric Cooperative	Rock Hill, City of
Fairfield Electric Cooperative	Santee Cooper (South Carolina Public Service Authority)
Gaffney Board of Public Works	Santee Electric Cooperative
Greer Commission of Public Works	South Carolina Electric & Gas Company
Horry Electric Cooperative	Tri-County Electric Cooperative
Laurens Commission of Public Works	Union, City of
Laurens Electric Cooperative	Westminster Comm. of Public Works
Lockhart Power Company	Winnsboro, Town of
Lynches River Electric Cooperative	

### **Natural Gas Utilities**

Blacksburg, Town of  
Chester County Natural Gas Authority  
Clinton-Newberry Natural Gas Authority  
Fort Hill Natural Gas Authority  
Greer Commission of Public Works  
Laurens Commission of Public Works  
Orangeburg Department of Public Utilities  
Piedmont Natural Gas Company  
South Carolina Electric & Gas Company  
Winnsboro, Town of  
York County Natural Gas Authority

## Appendix B. Merchant Power Plants

This is a list of merchant power plants that have applied for a Certificate of Operation from the South Carolina Public Service Commission.

Merchant Facility	Application Filing Date	Projected Investment (millions)	Capacity (MW)/ type/fuel (Combined or Simple Cycle)	Docket and Order No./ Date Approved	Location of Facility
Broad River Energy (Calpine)	6-7-99 & 5-19-00	\$205 (Approx.)	500/SC 320/SC 820 total Natural Gas	1999-253-E; 1999-671 9-22-99; 2000-754 3-26-01	Gaffney
Columbia Energy (Calpine)	9-22-00	\$250	500/CC Natural Gas	2000-487-E; 2001-108 2-6-01	At Carolina Eastman, 10 miles south of Columbia
Greenville Generating (Entergy)	11-13-00	\$380	900/SC Natural Gas	2000-558-E; 2001-194 3-28-01	Fork Shoals
GenPower Anderson	3-1-01	\$300	640/CC Natural Gas	2001-78-E; 2001-576 8-3-01	Town of Gluck near Anderson
Greenville County Power (Cogentrix)	9-24-01	\$450	810/CC Natural Gas	2001-411-E; 2002-120 04-01-02 (DENIED)	Fork Shoals
Cherokee Falls Development Company (FPL Energy)	12-21-01	\$130	332/SC Natural Gas	2001-504-E; 2002-306 3/26/02	Gaffney
Palmetto Energy Center (Calpine)	12-21-01	\$500+	970/CC/SC Natural Gas	2001-507-E; 2003-113 3/5/03 (WITHDRAWN)	Fort Mill

Source: South Carolina Office of Regulatory Staff.

## Appendix C. Electricity Overall System Totals by Category

	Actual					Projected				
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
<b>Total Cooperatives</b>										
Annual Peak System Demand (MW)	2,553.43	2,826.53	2,620.95	3,290.34	2,927.44	3,148.42	3,243.06	3,346.70	3,450.40	3,562.22
Total Annual System MWh	10,889.39	11,129.15	11,681.16	11,884.48	12,532.81	12,901.44	13,296.87	13,701.38	14,123.31	14,554.64
Total Miles of Distribution Line	53,776.9	54,607.6	55,993.0	56,685.2	57,509.4	58,438.0	59,370.0	60,309.0	61,368.0	62,320.0
Total Number of Customers	493,492.0	502,957.0	514,388.0	531,937.0	538,935.0	550,462.0	562,198.0	573,599.0	585,800.0	597,576.0
Total Generation from Qualified Producers (MWh)	0.00	0.00	0.00	0.00	0.00	2.24	2.56	2.86	3.14	3.41
<b>Total Municipalities</b>										
Annual Peak System Demand (MW)	701.66	699.69	733.13	709.29	712.49	717.60	731.24	737.73	745.11	751.84
Total Annual System MWh	3,281.02	3,214.47	3,232.57	2,399.63	2,447.91	3,373.90	3,392.16	3,420.00	3,447.20	3,475.90
Total Miles of Distribution Line	2,864.0	2,956.0	3,001.0	3,036.0	3,085.0	3,111.3	3,121.5	3,165.5	3,206.5	3,243.5
Total Number of Customers (all classes)	119,363.0	121,161.0	123,453.0	124,414.0	125,726.0	126,769.0	128,068.0	130,225.0	132,385.0	134,315.0
Total Generation from Qualified Producers (MWh)	262.56	304.10	371.10	343.00	281.80	282.96	298.15	303.15	303.15	303.15
<b>Progress Energy</b>										
Annual Peak System Demand (MW)	1,368.00	1,327.00	1,383.00	1,343.00	1,237.00	1,390.00	1,410.00	1,440.00	1,460.00	1,480.00
Total Annual System MWh	7,147.60	6,987.29	7,073.07	7,074.09	7,337.38	7,444.00	7,558.00	7,671.00	7,780.00	7,879.00
Total Miles of Distribution Line	8,587.0	8,654.0	8,692.0	8,728.0	8,769.0	8,900.0	9,000.0	9,200.0	9,300.0	9,400.0
Total Number of Customers (all classes)	160,923.0	162,419.0	163,746.0	164,764.0	165,872.0	167,000.0	169,000.0	170,000.0	172,000.0	173,000.0
Total Generation from Qualified Producers (MWh)	628,489.0	623,603.0	639,497.0	637,308.0	646,419.0	692,042.3	703,933.8	370,161.2	287,896.2	277,742.2
<b>Duke Power Company</b>										
Annual Peak System Demand (MW)	4,194.00	4,101.00	4,068.00	3,921.00	4,166.00	4,211.00	4,262.00	4,323.00	4,388.00	4,453.00
Total Annual System MWh	22,482.23	21,396.04	21,346.27	20,613.30	21,041.11	21,095.38	21,160.62	21,424.92	21,748.30	22,070.79
Total Miles of Distribution Line	22,528.0	22,748.0	23,050.0	23,324.0	23,597.0	N/A	N/A	N/A	N/A	N/A
Total Number of Customers (all classes)	492,507.0	510,639.0	503,020.0	498,876.0	530,407.0	539,744.0	549,344.0	559,483.0	569,817.0	580,414.0
Total Generation from Qualified Producers (MWh)	619,027.20	560,509.79	653,519.59	207,848.11	440,592.30	298,700.30	673,829.30	673,829.30	673,829.30	673,829.30
<b>Lockhart Power Company</b>										
Annual Peak System Demand (MW)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Annual System MWh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Miles of Distribution Line	505.0	510.0	515.0	520.0	525.0	530.0	535.0	540.0	545.0	550.0
Total Number of Customers (all classes)	6,154.0	6,196.0	6,250.0	6,316.0	6,360.0	6,408.0	6,456.0	6,504.0	6,553.0	6,602.0
Total Generation from Qualified Producers (MWh)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

## Electricity

### Overall System Totals by Category

	Actual					Projected				
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
<b>Santee Cooper</b>										
Annual Peak System Demand (MW)	1,551.00	1,583.00	1,712.00	1,680.00	1,680.00	1,863.00	1,892.00	1,920.00	1,947.00	1,973.00
Total Annual System MWh	11,003.94	10,986.16	11,570.54	11,515.71	11,633.38	12,420.95	12,531.79	12,641.69	12,746.99	12,851.30
Total Miles of Distribution Line	2,127.0	2,173.0	2,222.0	2,258.0	2,351.0	2,412.0	2,473.0	2,535.0	2,596.0	2,657.0
Total Number of Customers (all classes)	128,548.0	130,930.0	134,332.0	136,484.0	142,405.0	144,653.0	148,475.0	152,232.0	155,937.0	159,616.0
Total Generation from Qualified Producers (MWh)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>SC Electric &amp; Gas Company</b>										
Annual Peak System Demand (MW)	3,968.00	3,939.00	4,171.00	4,069.00	4,347.00	4,379.00	4,474.00	4,571.00	4,670.00	4,767.00
Total Annual System MWh	20,049.00	19,834.00	20,827.00	20,612.00	21,711.00	21,994.00	22,415.00	22,876.00	23,329.00	23,785.00
Total Miles of Distribution Line	20,342.0	20,614.0	21,529.0	21,964.0	22,524.0	N/A	N/A	N/A	N/A	N/A
Total Number of Customers (all classes)	523,555.0	537,263.0	560,227.0	570,419.0	584,654.0	594,864.0	607,563.0	618,657.0	629,854.0	640,839.0
Total Generation from Qualified Producers (MWh)	22,716.00	19,370.00	20,964.00	26,627.00	29,574.00	N/A	N/A	N/A	N/A	N/A
<b>TOTALS</b>										
Annual Peak System Demand (MW)	14,336.09	14,476.22	14,688.08	15,012.63	15,069.93	15,709.02	16,012.30	16,338.43	16,660.51	16,987.06
Total Annual System MWh	74,853.18	73,547.10	75,730.61	74,099.22	76,703.58	79,229.67	80,354.43	81,734.98	83,174.80	84,616.63
Total Miles of Distribution Line	110,729.9	112,262.6	115,002.0	116,515.2	118,360.4	73,391.3	74,499.5	75,749.5	77,015.5	78,170.5
Total Number of Customers (all classes)	1,924,542	1,971,565	2,005,416	2,033,210	2,094,359	2,129,900	2,171,104	2,210,700	2,252,346	2,292,362
Total Generation from Qualified Producers (MWh)	1,270,494.8	1,203,786.9	1,314,351.7	872,126.1	1,116,867.1	991,027.8	1,378,063.8	1,044,296.5	962,031.8	951,878.1



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